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The Gamification of Legal Education: Why Games Transcend the Langdellian Model and How They Can Revolutionize Law School

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INTRODUCTION

In winter of 2009–2010, a bizarre phenomenon swept through advanced countries: more than eighty million children, teens, and adults interrupted their first-world lives to harvest crops, raise livestock, and tend to the fields.[1] Farming—once considered a tedious, mundane activity—erupted as the latest pop culture sensation in the social networking game *Farmville*.[2] During their spare time, people across the world employed themselves as virtual agriculturalists for no tangible benefit. They sowed virtual plants in virtual fields with virtual chickens for virtual pay. They did it without compensation, and some even spent real money to do it.[3]

The success of *Farmville* highlights an important phenomenon relevant to educators everywhere: an activity can be amusing even if the subject matter of the activity is not.[4] Game developers have learned to tap into this phenomenon, turning even monotonous tasks into stimulating games. They call this process gamification.[5]

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1 Griffin McElroy, *FarmVille Community Surpasses 80 Million Players*, ENGADGET (Feb. 20, 2010, 5:30 PM), http://www.engadget.com/2010/02/20/farmville-community-surpasses-80-million-players [http://perma.cc/JT7V-YJGL].

2 *See generally FarmVille*, ZYNGA, https://zynga.com/games/farmville [http://perma.cc/KKJ5-WMWV].

3 *See Guide to Farm Bucks*, ZYNGA, https://support.zynga.com/article/farmville-2/Guide-to-Farm-Bucks-en_US [http://perma.cc/LV2Y-7FGX].

4 *See* GoogleTechTalks, *Fun Is the Future: Mastering Gamification*, YOUTUBE, at 5:20 (Nov. 1, 2010), https://youtu.be/6O1gNVeaE4g (noting that "fun, and the theme of the things that are fun, are actually not connected").

5 *See, e.g.*, Janna Anderson & Lee Rainie, *The Future of Gamification*, PEW RES. CTR. (May 18, 2012), http://www.pewinternet.org/2012/05/18/the-future-of-gamification/ [http://perma.cc/8DRM-H89Q]. There is considerable debate over the use of the word "gamification." *See, e.g.*, *id.* ("Gamification is a horrible made-up word. Just say games. Just say gaming interfaces. Just say game-design thinking.").

Gamification is particularly relevant to legal education today. Students, graduates, and professors alike tend to agree that law school can be profoundly unpleasant. As the old adage about law school goes: first they scare you to death, then they work you to death, then they bore you to death.[6] But surely it does not have to be this way. If the makers of *Farmville* can transform the mindless chores of virtual farming into an exciting, addictive activity, then law school professors can turn legal pedagogy into an enjoyable, captivating experience.

Since the introduction of the current legal education system by Harvard Law Professor Christopher Langdell in the 1870s,[7] commentators have flung considerable critiques at the American legal education system.[8] Some 140 years later, the critiques remain unanswered, the system has changed little, and the criticisms continue to mount.[9] And as each year passes without any significant change, it seems things have only worsened.[10]

This Article recommends the use of gamification to transform legal education. Part I of this article introduces the concept of gamification and explains the aspects of games relevant to legal educators. Part II summarizes the issues with legal education today that gamification is particularly apt to address. Part III sets forth three solutions to legal education's shortcomings inspired by gamification.

I. WHAT IS GAMIFICATION?

Gamification is the use of game thinking and game mechanics to engage audiences and solve problems.[11] "Game thinking is the idea of thinking of problem solving through the

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6 *See, e.g.*, Marcia Gelpe, *Professional Training, Diversity in Legal Education, and Cost Control: Selection, Training and Peer Review for Adjunct Professors*, 25 WM. MITCHELL L. REV. 193, 206 n.40 (1999).

7 Thomas C. Grey, *Langdell's Orthodoxy*, 45 U. PITT. L. REV. 1 (1983).

8 *See* John O. Sonsteng et al., *A Legal Education Renaissance: A Practical Approach for the Twenty-First Century*, 34 WM. MITCHELL L. REV. 303, 319 (2007).

9 *Id.*

10 *See generally id.*; Debra S. Austin, *Killing Them Softly: Neuroscience Reveals How Brain Cells Die from Law School Stress and How Neural Self-Hacking Can Optimize Cognitive Performance*, 59 LOY. L. REV. 791, 825 (2013); Paul Campos, *The Crisis Of American Law School*, 46 U. MICH. J.L. REFORM 177, 214 (2012); William D. Henderson & Rachel M. Zahorsky, *The Law School Bubble: How Long Will It Last If Law Grads Can't Pay Bills?*, A.B.A. J. (Jan. 1 2012), http://www.abajournal.com/magazine/article/the_law_school_bubble_how_long_will_it_last_if_law_grads_cant_pay_bills [http://perma.cc/8KXD-APAK]; Lawrence S. Krieger, *Institutional Denial About the Dark Side of Law School, and Fresh Empirical Guidance for Constructively Breaking the Silence*, 52 J. LEGAL EDUC. 112 (2002); Susan Stuart & Ruth Vance, *Bringing a Knife to the Gunfight: The Academically Underprepared Law Student & Legal Education Reform*, 48 VAL. U. L. REV. 41 (2013).

11 *See* GoogleTechTalks, *supra* note 4, at 3:29.

prism of games."[12] Game mechanics are the building blocks of games, such as levels, points, and leaderboards.[13]

Gamification works by creating challenges that otherwise may not exist, focusing our efforts to achieve clear goals.[14] Gamification then acknowledges when we complete challenges, activating the reward centers in our brains[15] and "motivat[ing] us to participate more fully in whatever we're doing."[16]

A.   The History and Future of Gamification

Gamification has been traced back to at least 1896 when Sperry & Hutchinson ("S&H") began offering Green Shield Stamps to retailers.[17] Retailers distributed the stamps as bonuses with purchases, and customers could redeem the stamps for merchandise from a catalogue or an S&H Green Stamps shop.[18]

Throughout the twentieth century, many organizations followed suit. Some of the most famous examples of gamification in the private sector include airline mileage programs, and the McDonald's Monopoly game, both of which use elements of games to enhance customer engagement and loyalty. But companies also use gamification in the workplace to train employees. Commercial airlines, for instance, use flight simulators to train pilots and reward them for the quality of their performance.[19] A study from the Colorado Denver Business School found that "employees trained on video games learned more factual information, attained a higher skill level and retained

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12 Christopher Carosa, *Exclusive Interview: Gabe Zichermann on How Game-Like Techniques Can Motivate Behavior*, FIDUCIARY NEWS (March 17, 2015), http://fiduciary news.com/2015/03/exclusive-interview-gabe-zichermann-on-how-game-like-techniques-can-motivate-behavior [http://perma.cc/7A62-R4NA]; *see also* Karl Kapp, *Playing with the Definition of "Game Thinking" for Instructional Designers*, KAPP NOTES (April 16, 2014), http://karlkapp.com/playing-with-the-definition-of-game-thinking [http://perma.cc/966Y-WJ65] ("Game thinking, from an instructional game designer's perspective, is approaching the design of a learning event from the perspective of learner actions and activities that lead to a meaningful outcome while navigating some sort of risk.").

13 Carosa, *supra* note 12.

14 *See, e.g.*, JANE MCGONIGAL, REALITY IS BROKEN: WHY GAMES MAKE US BETTER AND HOW THEY CAN CHANGE THE WORLD 22–23 (2011).

15 *Id.* at 47 ("By accomplishing something that is very hard for us, like solving a puzzle or finishing a race, our brains release a potent cocktail or norepinephrine, epinephrine, and dopamine. These three neurochemicals in combination make us feel satisfied, proud, and highly aroused."); *see also id.* at 124.

16 *Id.*

17 KEVIN ROEBUCK, CUSTOMER LOYALTY PROGRAMS: HIGH-IMPACT STRATEGIES - WHAT YOU NEED TO KNOW: DEFINITIONS, ADOPTIONS, IMPACT, BENEFITS, MATURITY, VENDORS 52 (2012).

18 *Id.*

19 *See* Lydia DePillis, *Flights of Fancy: Inside the Intense World of Virtual Pilots*, WASH. POST (Dec. 20, 2013), http://www.washingtonpost.com/blogs/wonkblog/wp/2013/12/20/ flights-of-fancy-inside-the-intense-world-of-virtual-pilots [http://perma.cc/3TE6-GG84].

information longer than workers who learned in less interactive environments."[20] Gamification is also used to make better products. In Windows' "Language Quality Game," Microsoft employees earn points and compete for high scores for assessing localized versions of the Windows operating systems in their free time.[21] Analysts estimate that in 2015, more than 70% of Global 2000 organizations "will have at least one gamified application,"[22] and by 2018, the gamification market is expected to be worth $5.5 billion, with an annual compound growth of around 67% per year.[23]

Scientific researchers use gamification to aid in scientific discovery. On Planethunters.org, hundreds of thousands of players aided in the discovery of extrasolar planets by classifying light curves from stars monitored by the Kepler space telescope.[24] Additionally, researchers at the University of Washington created a game, *Fold.it*, to grapple with the mysteries of protein folding.[25] Forty-six thousand gamers logged on to *Fold.it*, and solved a fifteen-year-old AIDS problem in ten days.[26] Scientists hope to use the model of the protein generated by *Fold.it* to develop drugs that could hinder the reproduction process of HIV in humans.[27]

In Sweden, government authorities turned speeding tickets into a game. Each person who passes a speeding camera while going under the speed limit is automatically entered into a lottery to win the proceeds of the tickets given by the camera to those driving over the speed limit.[28] The game produced a 22%

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[20] Rachel Emma Silverman, *Latest Game Theory: Mixing Work and Play*, WALL ST. J. (Oct. 10, 2011), http://www.wsj.com/articles/SB1000142405297020429450457661537178 3795248.

[21] Oliver Chiang, *When Playing Videogames at Work Makes Dollars and Sense,* FORBES (Aug. 9, 2010), http://www.forbes.com/2010/08/09/microsoft-workplace-training-technology-videogames.html [http://perma.cc/7K23-8CMS].

[22] Press Release, Gartner, Gartner Says by 2015, More than 50 Percent of Organizations That Manage Innovation Processes Will Gamify Those Processes, (Apr. 12, 2011), http://www.gartner.com/newsroom/id/1629214 [http://perma.cc/V4VH-DZPT].

[23] Press Release, MarketsandMarkets, Gamification Market Worth $5.5 Billion by 2018*, PR NEWSWIRE (June 4, 2013), http://www.prnewswire.com/news-releases/gamification-market-worth-55-billion-by-2018-210042381.html [http://perma.cc/P2DB-C57A].

[24] Chris J. Lintott et al., *Planet Hunters: New Kepler Planet Candidates from Analysis of Quarter 2*, 145 ASTRONOMICAL J. 1 (2013), http://iopscience.iop.org/1538-3881/145/6/151/pdf/1538-3881_145_6_151.pdf [http://perma.cc/9ZM4-MFUU].

[25] Dean Praetorius, *Gamers Decode AIDS Protein that Stumped Researchers for 15 Years in Just 3 Weeks*, HUFFINGTON POST (Sept. 19, 2011, 3:37 PM), http://www.huffingtonpost.com/2011/09/19/aids-protein-decoded-gamers_n_970113.html [http://perma.cc/JEZ4-U32M].

[26] Anderson & Rainie, *supra* note 5.

[27] Praetorius, *supra* note 25.

[28] *'Gamifying' the System to Create Better Behavior*, NAT'L PUB. RADIO (Mar. 27, 2011, 4:34 PM), http://www.npr.org/2011/03/27/134866003/gamifying-the-system-to-create-better-behavior [http://perma.cc/R4NV-AHJJ].

decrease in the average speed among drivers, enhancing driver and pedestrian safety.[29]

In the education sector, gamification is making a roaring entrance. Educators everywhere are utilizing the power of games to engage students and inspire learning. In Minnesota, for example, third grade teacher Ananth Pai transformed his classroom into a gamer's paradise: "he collected the best games for math, reading, vocabulary, geography and other subjects available online and from game creators and created a digital profile for every kid in his class. Suddenly, kids were engaged—absorbed, actually, in getting to the games' next levels."[30] In four and a half months, his students moved from a mid-third grade level to a mid-fourth grade level.[31] Elsewhere in the education sector, higher education projects have sprung up around gamification, including Penn State's Educational Gaming Commons.[32] But perhaps, the most well-known example of gamification in education is Salman Khan's "Khan Academy", which seeks "to provide a free world-class education for anyone, anywhere."[33]

B.   What Makes a Game?

At the core of gamification are, of course, games. Although gamification often turns processes into complete games—such as military war games—gamification can simply use elements of games without the entire game structure. Regardless, an analysis of games provides a useful lens through which to view the benefits of gamification.

There are many competing definitions for what constitutes a game,[34] but one accepted definition of a game is "a system in which players engage in an artificial conflict, defined by rules,

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[29] *See* Charlie Sorrel, *Swedish Speed-Camera Pays Drivers to Slow Down*, WIRED (Dec. 6, 2010, 7:17 AM), http://www.wired.com/2010/12/swedish-speed-camera-pays-drivers-to-slow-down/ [http://perma.cc/V5CG-QBD8].

[30] Beth Hawkins, *Teacher Ananth Pai's Do-It-Yourself Tech Effort Pays Big Dividends for Students*, MINNPOST (Nov. 13, 2012), http://www.minnpost.com/learning-curve/2012/11/teacher-ananth-pais-do-it-yourself-tech-effort-pays-big-dividends-students [http://perma.cc/X7L6-XH9K].

[31] *Ananth Pai: Engaging Students Through Scalable Game Based Curriculum*, INSPIRED TO EDUCATE (Aug. 27, 2012), http://inspiredtoeducate.net/inspiredtoeducate/ananth-pai-engaging-students-through-scalable-game-based-curriculum/ [http:// perma.cc/W9RM-XXWG].

[32] *See, e.g.*, *Educational Gaming Commons*, PA. ST. U., 2012, http://gaming.psu.edu [http://perma.cc/5C9B-C2B4].

[33] *About Khan Academy,* KHAN ACADEMY, https://www.khanacademy.org/about [http://perma.cc/M6WH-MDSY]. For background on the Khan Academy, see Khan Academy, *Salman Khan Talk at TED 2011 (from ted.com)*, YOUTUBE (Mar. 9, 2011), https://www.youtube.com/watch?v=gM95HHI4gLk [hereinafter *Salman Khan TED Talk*].

[34] KARL M. KAPP, THE GAMIFICATION OF LEARNING AND INSTRUCTION: GAME-BASED METHODS AND STRATEGIES FOR TRAINING AND EDUCATION 6–7 (2012).

that results in a quantifiable outcome."[35] Using this definition, this section analyzes games through their component parts.

C. Artificial Conflict

Games use artificial conflicts to challenge players to overcome unnecessary obstacles. Artificial conflict enables the use of abstraction and gives players permission to fail.

Reality poses serious difficulties in the context of learning, namely the distraction of extraneous variables, and the difficulty of creating specific situations. Through the use of abstraction, "[g]ames remove elements of reality to keep the player focused on the essence of the game. Removing extraneous factors keeps the game moving and the player involved."[36] For instance, in the game *Microsoft Flight Simulator*, players can focus on the goal of the game—i.e., piloting the aircraft—without having to worry about other variables involved in real life flying—e.g., maintenance of the plane, turbulence, and the risk of serious bodily injury or death. Abstraction makes it easier to grasp concepts found in the real world. Further, "[reality] presents the ultimate possible specificity—each situation it poses is unique. Consequently, each single experience in reality can only be used to derive conclusions about that one unique situation."[37] Game creators have control of the game and use abstraction to determine the elements that players encounter, rather than leaving the elements to the whims of reality.

Moreover, players in a game know that the obstacles faced are artificial, thus, evoking a different reaction in the player than if the obstacles were real. "When we're afraid of failure or danger, or when the pressure is coming from an external source, extreme neurochemical activation doesn't make us happy. It makes us angry and combative, or it makes us want to escape and shut down emotionally."[38] Games are, by design, solvable, and provide players with a safe environment to operate in which failure is an option. Failure is a crucial part of learning that no learning environment should do without.[39]

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[35] KATIE SALEN & ERIC ZIMMERMAN, RULES OF PLAY: GAME DESIGN FUNDAMENTALS 80 (MIT Press, 2004).

[36] KAPP, *supra* note 34, at 27.

[37] Jonathan H. Klein, *The Abstraction of Reality for Games and Simulations*, 36 J. OPERATIONAL RES. SOC. 671, 675 (1985), http://www.jstor.org/stable/pdf/2582262.pdf?acceptTC=true [http://perma.cc/TSD2-U3DF].

[38] MCGONIGAL, *supra* note 14, at 32.

[39] *See* Benedict Carey, *Why Flunking Exams Is Actually a Good Thing*, N.Y. TIMES MAG. (Sept. 4, 2014), http://www.nytimes.com/2014/09/07/magazine/why-flunking-exams-is-actually-a-good-thing.html?_r=2 [http://perma.cc/T544-Z4WN]; Anne Sobel, *How Failure in the Classroom Is More Instructive than Success*, CHRON. HIGHER EDUC. (May 5,

Failure in a game entails minimal consequences. This encourages players to explore different options for success. In many games, players are permitted to fail multiple times until they succeed. If a player fails too much, some games have built in mechanisms to provide hints or decrease difficulty so that success always seems achievable with sufficient time and effort.

1. Rules

The rules of a game define the boundaries of the environment in which the player is engaged. The rules of a game include the goals, and limits to how the game may be played. Often, rules in a game are altered within the context of two different types of levels: game levels and playing levels.

Game levels are segmented pieces of a larger game, allowing players to progress from one level to the next as they move toward the end goal of the game. Each game level contains its own manageable set of goals which the player seeks to accomplish. Goals give games a focus and a purpose, and generate a method for measuring the success of a player. "But goals have to be well structured and sequenced to have sustained meaning and to motivate players to achieve those goals."[40] Game levels provide a useful framework in which to create reasonable goals.

A playing level is "the degree of difficulty the player chooses when he or she first enters the game."[41] With different playing levels, games challenge players with various levels of experience at appropriate difficulties. At their best, games are neither too easy nor too hard. They place players at the edge of their skill level. And when gamers are engaged at the limits of their abilities, they attain a state of mind which psychologists refer to as the "flow" state.[42] Flow is "the satisfying, exhilarating feeling of creative accomplishment and heightened functioning."[43] Flow promotes effective learning, but it is also psychologically fulfilling. "When you are in a state of flow, you want to stay there: both quitting *and* winning are equally unsatisfying outcomes."[44] The experience of flow is part of what makes games so addicting.[45]

2014), http://chronicle.com/article/How-Failure-in-the-Classroom/146377/ [http://perma.cc/DB9M-TFR6]; *see also* Warren Binford, *How to Be the World's Best Law Professor*, 64 J. LEGAL EDUC. 542, 543 (2015).

40 KAPP, *supra* note 34, at 29.

41 *Id.* at 37.

42 *See generally* MIHALY CSIKSZENTMIHALYI, BEYOND BOREDOM AND ANXIETY: THE EXPERIENCE OF PLAY IN WORK AND GAMES (1975).

43 MCGONIGAL, *supra* note 14, at 35 (quoting CSIKSZENTMIHALYI, *supra* note 42, at xiii).

44 MCGONIGAL, *supra* note 14, at 24 (emphasis in original).

45 *Id.* at 42–43.

2. Quantifiable Outcome

Another critical aspect of games is the quantifiable outcome. A quantifiable outcome allows the player to adjust his or her behavior based on previous outcomes, to make success more likely in the future. Games always generate quantifiable outcomes as end-of-game feedback by designating winners and losers, but many games provide feedback through the duration of the game as well.

In game design circles, feedback that is continuous, engaging, and effective is described as "juicy feedback."[46] Juicy feedback can drastically improve a player's performance.

> Real-time data and quantitative benchmarks are the reason why gamers get consistently better at virtually any game they play: their performance is consistently measured and reflected back to them, with advancing progress bars, points, levels, and achievements. It's easy for players to see exactly how and when they're making progress.[47]

Juicy feedback informs players on the success of their performance and induces them to try harder.

When quantifiable outcomes are positive, they are often accompanied with a reward. Rewards—e.g., medals, experience points, and badges—reinforce successful behaviors and promote positive emotions by acknowledging a player's hard work.[48]

II. LEGAL EDUCATION TODAY

A.   Limited Engagement and Applied Learning

The primary pedagogical tool in legal education is the case method, whereby students extract legal principals through analysis of court decisions.[49] The case method is generally accompanied by Socratic dialogue in which professors induce students to learn the legal principles involved on their own. The case method is important because it teaches students how to think like a lawyer.[50] The Socratic method is important because it "motivate[s] students to reason rather than recite."[51] In combination, these methods prepare students for the analysis of court decisions in legal practice. But they teach only a fraction of the skills required for successful legal practice, and their use as

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[46] KAPP, *supra* note 34, at 36.
[47] MCGONIGAL, *supra* note 14, at 157.
[48] *See* KAPP, *supra* note 34, at 51–74; MCGONIGAL, *supra* note 14, at 28.
[49] Sonsteng et al., *supra* note 8, at 325.
[50] *See generally* WILLIAM M. SULLIVAN, ET AL., EDUCATING LAWYERS: PREPARATION FOR THE PROFESSION OF LAW (2007).
[51] Sonsteng et al., *supra* note 8, at 325.

the primary pedagogical tool for legal education is hardly defensible.[52]

Professors may stick with these methods because they provide a simple way to engage students—to involve them in the learning process and to motivate them to improve. The case method and Socratic dialogue force students to apply knowledge learned in the course, and applied learning is well-known to be an effective way of understanding and retaining information.[53] But these methods are inefficient because only one or two students can engage with the professor at a time. All of the other students experience passive learning. Even worse, time constraints force many professors to limit engagements to a few minutes per student, once or twice per semester. At this rate, an average student engages with a professor for maybe ten to twenty minutes across the entire semester. This illustrates a serious deficiency with student engagement.

Further, the case method is often used ineffectively. Professors sometimes engage students "through the arbitrary and ruthless questioning about cases and legal principles that are often subtle, minor, and obscure."[54] Some professors rely on classroom discussion as a check that students are completing the assigned reading, rather than using discussion to advance learning objectives—clearly an inefficient use of resources. And when professors are harsh on their end of the dialogue, "the fear of being publicly criticized and humiliated for an incorrect answer can be incapacitating, rendering some students mute or unwilling to take risks in their discourse."[55] The negative impact of such unnecessary stress on the learning environment is well documented.[56]

Legal textbooks and casebooks mimic this engagement deficiency. They contain the raw material from which students

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[52] *See, e.g.*, Stephen M. Feldman, *The Transformation of an Academic Discipline: Law Professors in the Past and Future (or Toy Story Too)*, 54 J. LEGAL EDUC. 471, 482 (2004) (reviewing critiques of the ineffectiveness of the case method); David D. Garner, *Socratic Misogyny?—Analyzing Feminist Criticisms of Socratic Teaching in Legal Education*, 2000 BYU L. REV. 1597, 1610–11 (2000) (criticizing the Socratic method as an inefficient way to convey large amounts of information).

[53] *See* Gerald F. Hess, *Heads and Hearts: The Teaching and Learning Environment in Law School*, 52 J. LEGAL EDUC. 75, 102 (2002) ("Students learn better when they are actively engaged in the learning process."); Binford, *supra* note 39, at 11–12.

[54] Sonsteng et al., *supra* note 8, at 337.

[55] Robin S. Wellford-Slocum, *The Law School Student-Faculty Conference: Towards a Transformative Learning Experience*, 45 S. TEX. L. REV. 255, 271 (2004).

[56] *See* Austin, *supra* note 10, at 825 ("The impact of stress on law student cognition includes deterioration in memory, concentration, problem-solving, math performance, and language processing. Curiosity is dampened, and creativity is diminished. A paralysis sets in, limiting motivation and the ability to break out of repetitive behavior patterns. Research has shown that hippocampi shrink in size in people with major depression.").

attempt to passively understand legal reasoning, but without many opportunities for applied learning. This is unlike most, if not all, other academic areas. A standard math textbook, for instance, contains dozens of practice problems in a variety of formats that accompany each and every lesson.[57] Legal textbooks often provide a few questions after each lesson or case, but these questions are insufficient in quantity and quality, leading most students to purchase supplemental texts to overcome this deficiency. At the very least, this creates an inconvenience. And at its worst, this creates barriers to learning through confusion, stress, and misdirection. Further, legal textbooks bind themselves to a single medium—i.e., text—neglecting the benefits of a multimedia approach—e.g., increased understanding, retention, and recall.[58] In short, legal education provides little opportunity for engagement and applied learning.

B. Minimal Feedback

Because engagement and applied learning are so sparse in legal education, students suffer from a lack of feedback. Generally, students receive feedback only through minimal classroom engagement and a single grade on a single final examination. Students, therefore, have little opportunity to improve.

For students participating in a dialogue with the professor, only some feedback directly relates to course objectives—many engagements focus on the facts of a particular case rather than the law or legal reasoning. But even when feedback is effective and relevant, it is infrequent. Feedback gained through the classroom experience amounts to little more than a few brief interactions with a professor per semester.

All of the students not currently participating in the dialogue "are expected to listen, silently answer the questions being asked of their peers, and determine whether their potential response was appropriate based on the professor's response to the student . . . ."[59] In this way, students receive no direct feedback. If observing students incorrectly understand the material, they have little opportunity to understand why.

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57 For example, see generally RICHARD G. BROWN ET AL., ALGEBRA: STRUCTURE AND METHOD, BOOK 1 (2000).

58 *See, e.g.*, Fred Galves, *Will Video Kill the Radio Star? Visual Learning and the Use of Display Technology in the Law School Classroom*, 2004 U. ILL. J.L. TECH. & POL'Y 195, 203 n.26 (2004).

59 Linda S. Anderson, *Incorporating Adult Learning Theory into Law School Classrooms: Small Steps Leading to Large Results*, 5 APPALACHIAN J.L. 127, 135 (2006).

Some professors attempt to engage the whole class with "clicker questions," where each student answers multiple-choice questions with a wireless remote.[60] Answers are individually anonymous, but the aggregate results of student responses are revealed. Generally, a short discussion on the results follows. Unfortunately, only a few classrooms utilize multiple choice clicker questions. But even in these classrooms, only a few questions are asked and often not until the end of the class. In this way, feedback is sparse and delayed.

Students also receive feedback via examination scores. But law school examinations are an inaccurate measure of student understanding:

> timed essay exams are almost exclusively the only method of testing. A single method of testing does not utilize a variety of learning and problem-solving methods and ignores underlying character attributes that are important predictors of a student's success as a lawyer. The system of timed essay exams unfairly benefits students who write well, while not rewarding those who may have an advantage in an oral examination setting.[61]

Moreover, because examination scores are an inaccurate measure of skills and knowledge, students shift their focus "from the objectives of the course to being prepared for the final test."[62]

Further, examination scores consist of a single grade. This one grade provides little information for students to use to adjust their future performance. Additional feedback specifying what the student did right and wrong is hard to come by, if available at all. But even if examination feedback is detailed and accurate, it is too infrequent to be effective. When students receive scores from a final examination, they have already completed the course. Students have no immediate incentives to make adjustments to their understanding. Even in courses with a midterm examination, students receive, at best, feedback on some small subset of material from the first half of the course before they take their final examination.

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60 *See, e.g.*, Martha Neil, *Move Over Socratic Method, 'Clicker' Offers Law Profs New Option to Monitor Student Progress*, A.B.A. J. (Nov. 17, 2010, 3:00 PM), http://www.abajournal.com/news/article/move_over_socratic_method_clicker_offers_law_profs_new_option_to_monitor_st [http://perma.cc/4XZW-R8HZ]; Winnie Hu, *Students Click, and a Quiz Becomes a Game*, N.Y. TIMES (Jan. 28, 2008), http://www.nytimes.com/2008/01/28/education/28neck.html?_r=0 [http://perma.cc/HR6X-V92D].

61 Sonsteng et al., *supra* note 8, at 346.

62 Anderson, *supra* note 59, at 136.

C.   Nominal Personalization

Another issue facing students in law school classrooms is one-size-fits-all teaching. Professors cannot teach to each and every student. They can teach to the top of the class, to the bottom of the class, or, more likely, to somewhere in the middle. At any given time, therefore, the class is either too fast or too slow for most students.

Compounding the issue of classroom pace is "the failure to recognize students' pre-existing knowledge."[63] Students today come from vastly different backgrounds with different sets of knowledge about the world. The failure to take this into account means that professors never teach to the level of any one student. This is important because an individual's pre-existing knowledge "can significantly affect how a student remembers, organizes, and interprets the curriculum."[64]

Further, students learn in different ways. Some prefer visual over auditory learning; some prefer active over passive learning; others prefer intuitive reasoning over logical reasoning.[65] These factors, too, are not taken into account. Students are subject to the teaching style of their professors, like it or not.

While attending a live class enables a professor to partially "customize" or "personalize" the instruction for the students present, any "personalized" instruction that can be said to come from attending a live class concludes at the end of class. Personalized learning does not follow a student home; it is not available when a student attempts practice problems on her own, or when reviewing material for study. Moreover, personalized instruction from class is rarely catalogued for reference. If a student misses a piece of information because of absence, misunderstanding, or simply zoning out, she has limited ability to retrieve the information later.

The worst consequence of the lack of personalization is what Salman Khan, founder of the Khan Academy, calls "Swiss cheese learning."[66] Swiss cheese learning is the idea that students almost always pass courses with holes in their knowledge, and yet they are forced to move on.[67] Even if a student scores a 95% on an examination, the score indicates that he or she does not understand 5% of the material. For instance, a law school

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[63] Sonsteng et al., *supra* note 8, at 395.
[64] *Id.*
[65] *See generally* Richard M. Felder & Linda K. Silverman, *Learning and Teaching Styles in Engineering Education*, 78(7) ENG'G EDUC. 674, 674 (1988).
[66] SALMAN KHAN, THE ONE WORLD SCHOOLHOUSE: EDUCATION REIMAGINED 85 (2013).
[67] *Id.*

student might be able to pass a Civil Procedure course, even if she has little understanding of the discovery process, so long as she has a decent understanding of other aspects of Civil Procedure. This is a horrifying fact for institutions that purport to transform students into professionals. No student should be able to pass a course without 100% comprehension of the relevant material.

The problem of Swiss cheese learning is further compounded because concepts in law school build on one another. If a student does not understand the foundational material, he or she stands no chance of mastering the secondary or tertiary material that flows from it.[68]

D.   Limited Options

Another issue with the current legal education system is limited options for students. Students must choose from select courses that happen to be offered at their school, taught by professors that students do not choose.

Law schools only offer courses taught by professors employed at each school. This happens because law schools use live courses, and professors can only be in one physical place at a time. Professors must compete with other professors at that school to teach any given course. But statistically speaking, no matter which law school a student attends, the best professor(s) for any given course can most likely be found at some other school. Therefore, students rarely learn from the best professors; this creates significant opportunity costs.

Apart from choosing from a limited number of professors, students also must choose from a limited number of courses. Students rarely take courses outside of their particular law school. This means that students miss out on the opportunity to take specialized courses that might advance their careers. But they also tend to miss out on courses that could provide the basic foundation for entering the legal profession. Many commentators agree that law school does not provide individuals with enough skills or experience to be successful lawyers.[69] A 2009 report

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68   *See id.* at 83.
69   *See, e.g.*, Erwin Chemerinsky, *Rethinking Legal Education*, 43 HARV. CIV. RTS.-CIV. LIBERTIES. L. REV. 595, 595 (2008) ("[T]he reality is that few law students graduate from law school ready to practice law."); *see also* John M. Burman, *Oral Examinations as a Method of Evaluating Law Students*, 51 J. LEGAL EDUC. 130, 132 (2001) ("[T]he required curriculum at many, if not most, American law schools virtually ignores at least half of the fundamental skills every lawyer should have."); William P. Quigley, *Introduction to Clinical Teaching for the New Clinical Law Professor: A View from the First Floor*, 28 AKRON L. REV. 463, 469 (1995) (quoting Chief Justice Warren E. Burger: "The law schools

compiled a list of twenty-six skills that are important to effective lawyering,[70] and an analysis of the list reveals that traditional law school does not teach nineteen of these skills.[71] "Live client clinics may or may not afford some opportunities to develop [some of these missing skills]," but the remaining skills "may be absent from law school entirely."[72] Further, enrollment in clinical courses is extremely limited.[73] This highlights a shocking truth about the effectiveness of law school.

E.   Soaring Expense

One of the most pervasive problems facing law students today is the rising cost of attending law school. The cost of tuition in higher education has increased about 8% per year since at least the 1950s.[74] In 2013, the average tuition at a private law school was $41,985.[75] This figure does not include room and board. The average cost of borrowing money for law school was estimated at $216,406 for 2013 graduates.[76]

These costs are significant enough alone, but a weak job market compounds the issue for law school graduates. Data from the ABA on the class of 2013 reveals that nine months after graduation, only 57% of graduates whose employment status was known were employed in full-time, long-term positions requiring bar admission.[77] Projections for the next decade suggest that less than 48% of graduates of ABA-accredited law schools will get

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of this country on their part have superbly trained students in legal principles and analysis but the question is whether that is enough. In my view that is not enough.").

[70] Marjorie M. Shultz & Sheldon Zedeck, *Final Report: Identification, Development and Validation of Predictors for Successful Lawyering* 25 (Sept. 2008), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1353554.

[71] *See* Susan Swaim Daicoff, *Expanding the Lawyer's Toolkit of Skills and Competencies: Synthesizing Leadership, Professionalism, Emotional Intelligence, Conflict Resolution, and Comprehensive Law*, 52 SANTA CLARA L. REV. 795, 823–24 (2012). Some of the skills not explicitly covered by most legal educators include: organizing and managing one's own work, organizing and managing others (staff/colleagues), stress management, creativity/innovation, strategic planning, building relationships with clients, and community involvement and service. *See id.* at 822–24.

[72] *Id.* at 824 n.127.

[73] *Id.* at 824 n.126.

[74] *See Tuition Inflation*, FINAID, http://www.finaid.org/savings/tuition-inflation.phtml [http://perma.cc/AY7A-89F5].

[75] *Tuition Tracker,* LAW SCHOOL TRANSPARENCY, http://www.lawschooltransparency.com/reform/projects/Tuition-Tracker [http://perma.cc/3J5F-NZP2].

[76] Debra Cassens Weiss, *Legal Education Cost Is Even Higher than First Estimated, Transparency Group Says,* A.B.A. J. (May 7, 2012, 2:37 PM), http://www.abajournal.com/news/article/legal_education_cost_is_even_higher_than_first_estimated_transparency_group [http://perma.cc/4P8U-RXQK].

[77] *American Bar Association Releases Class of 2013 Law Graduate Employment Data,* A.B.A. (Apr. 9, 2014), http://www.americanbar.org/news/abanews/aba-news-archives/2014/04/american_bar_associa4.html [hereinafter *ABA 2013 Employment Data*] [http://perma.cc/M98Z-3KZ3].

legal jobs.[78] In short, a law degree is expected to be a significant negative investment for most students.[79]

F.   Nebulous Credentials

Even if a student manages the debt load that comes with three years of full-time professional education, he or she enters the job market with inaccurate and incomplete measures of skill and knowledge. Grades say little about the skills required for any given job. Grades merely identify who performed better or worse on assessments that generally amount to a single exam or paper. Students' grades are often distilled down to a single GPA or class rank that omits indicators on the strengths and weaknesses of an individual on particular legal topics. Further, a variety of factors are not taken into account when computing GPA because students are not directly graded on such factors, including communication skills, leadership skills, and work ethic.

Finally, the Juris Doctor degree makes no differentiation between individuals in a highly segmented profession. Employers must attempt to assess for themselves the abilities of a candidate employee in any given field; employers cannot rely solely on the degree. This creates significant transaction costs for employers, and makes it difficult for legal professionals to offer proof of their skills.

III. SOLUTIONS

Law schools already utilize games to motivate, engage, and assess students. CALI awards[80] and class rank engender competition between students. "Cold-calling" maintains engaged discussions and promotes preparedness for class. Examinations, whether multiple choice questions or essays based on fact patterns, act as games. In fact, nearly all applied learning methods can be classified as a game. But these games tend to be basic and poorly designed. To gamify legal education is simply to acknowledge these facts, and then to draw upon the massive body of knowledge from the game development community to enhance legal education.

The following solutions are intended to inspire the use of well-designed games to invigorate the law school experience. The first solution tackles the lack of engagement and feedback in law

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[78] Campos, *supra* note 10, at 214.

[79] *Id.* at 207.

[80] The Center for Computer-Assisted Legal Instruction Excellence for the Future Award (CALI Award) "is given to the highest scoring student in each law school class at many law schools." *CALI Excellence for the Future Awards*, CENTER FOR COMPUTER-ASSISTED LEGAL INSTRUCTION EXCELLENCE, http://www.cali.org/content/cali-excellence-future-awards [http://perma.cc/YPT5-LDYK].

school, and offers simple ways to incorporate games into existing classrooms. The second solution goes a step further by also addressing limited personalization and course offerings, and suggests a more radical change using games in and out of the classroom. The third solution takes a carte blanche approach to reform, in an attempt to also solve the cost and credential issues, by gamifying law school from the ground up.

A.   Solution #1: More, Better Games Inside and Outside the Classroom

In most law school classrooms today, professors teach through some variation of the case method with Socratic dialogue. With this system, each student rarely engages with the professor, and students receive minimal feedback. By supplementing the traditional classroom experience with game thinking and game mechanics, professors could immediately increase student involvement and motivation, provide more opportunities for applied learning, and give students an accurate portrait of their understanding.

The Proposal:	Gaming Elements:
- Audience response systems	- Leaderboards
- Engagement with each student	- Competition
- Applied learning	- Collaboration
- Low-risk testing	- Progress tracking
- Public or anonymous scoring	- Feedback
- Games in the classroom	- Replay
- Applied learning	**Benefits:**
- Contextual learning	- Engagement
	- Motivation
	- Performance indicators

A simple way to implement gamification in the classroom is with the use of audience response systems ("ARS"). ARS enables professors to pose ungraded questions to each student in the classroom, an instant advancement over the traditional classroom dialogue. And, research shows that low-risk testing is one of the most effective learning methods.[81] The "clicker questions" many professors now use are a type of ARS.[82] But ARS should be used in greater frequency and with more game elements. ARS questions could be interspersed throughout lectures to maintain continuous engagement, or clumped into

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[81] *See* Binford, *supra* note 39, at 545–46.

[82] *See, e.g.*, LegalEDweb, *"Using Technology for Engagement and Assessment" Sydney Beckman, Duncan School of Law*, YOUTUBE (Oct. 9, 2014), https://youtu.be/5GqthSPjG0M?list=PLLxxzZq76ixxbd_KFvJYVxyezP8rxvQpY.

groups of questions for more comprehensive examinations. Instead of specialized "clickers" that offer limited functionality, ARS can operate through a web-based application that students can access on their laptops or smartphones.[83]

Every multiple-choice question asked of a student is, in effect, a rudimentary game. But, more gaming elements can be added to ARS to enhance student engagement and motivation. If web-based ARS tracked students' answers throughout a class, the application could chart each student's level of comprehension in real time. ARS could award "points" to generate positive emotional feedback. Points could be awarded on a simple basis, such as "+1" for correct answers and "–1" for incorrect answers, or on a more complex basis accounting for the difficulty of each question and the novelty of the material being tested.

Further, each time a student answers incorrectly, ARS could generate a detailed analysis of the question and answer for each student to review on her own screen. At the end of each class, or throughout the semester, the application could generate progress reports with "juicy feedback," identifying areas of difficulty for each student and suggesting relevant resources for review.

Public scoreboards could enhance the ARS experience. "Clicker questions" are usually answered anonymously, but a twist on this format could create friendly competition in the classroom. For instance, the application might publicly broadcast the top ten players on a leaderboard. Or, a random group of students might be selected to have their scores publicly revealed—similar to the "on call" method of class participation. Or, teams of students could compete with aggregate point totals. If a professor chooses to keep scoring anonymous, the application could still display to each student how his or her score compares to the average classroom score.

Further, these questions should be available to students for replay after class. This would be particularly useful for students when reviewing for graded examinations. During replay, students could review all of the ARS questions, or some subset of the questions, such as those the student answered incorrectly before, or those questions marked as challenging by the professor.

Another gaming element that could be adapted for ARS is a "count down" timer. A timer would add a sense of urgency and excitement to each question, induce students to practice quick thinking, and ensure the class moves at a reasonable pace.

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83 *See, e.g.*, POLL EVERYWHERE, http://www.polleverywhere.com [http://perma.cc/9JRK-QR3B].

ARS could be used for a variety of examination types beyond a multiple-choice format. For example, in an Evidence course, students could watch videos of a witness examination in court and press a button to register objections to opposing counsel's questions. Again, students could compete on teams—for example, as prosecutors or defense counsel—and professors could follow the activity with an analysis of the merits of the objections. In an even more complex iteration of this scenario, the examining attorney and the witness could be played by live actors (perhaps students from a mock trial team), with the professor acting as the judge and students acting as the witness's counsel. During questioning, if a critical mass of students votes to object, one student who votes for the objection would have to stand up, object, and argue with opposing counsel. The professor would sustain or overrule the objection, award points for successful arguments, and deduct points for meritless objections.

Beyond ARS, professors can use a number of games and game-like pedagogies to enhance student engagement, motivation, and applied learning. Many professors have already adopted games in their classrooms to meet these goals. Professor Jennifer Rosato, currently the Dean and Professor of Law at DePaul University College of Law, created a number of games for her Civil Procedure Course, including one called "Buffalo Creek Family Feud" to "teach certain discovery rules relating to depositions, interrogatories, and requests for production of documents."[84] This game revolves around simulated litigation between two families.[85] Professor Rosato chooses six contestants with three students on each team.[86] She then poses a series of short-answer questions to each team, such as: "What is the proper way to obtain documents from the insurance company?"[87] She awards points based on the quality of the responses and the authority offered in support.[88]

The late Professor James Brown, Emeritus Professor at the George Washington University Law School, developed a semester-long game for his Land Development Law course to help students "understand the problems [of the construction and land development business] in their true context rather than as isolated, disconnected episodes."[89] He designed his game to

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[84] *See generally* Jennifer L. Rosato, *All I Ever Needed To Know About Teaching Law School I Learned Teaching Kindergarten: Introducing Gaming Techniques into the Law School Classroom*, 45 J. LEGAL EDUC. 568, 569–70 (1995).

[85] *Id.* at 575.

[86] *Id.*

[87] *Id.* at 575–76.

[88] *Id.* at 576.

[89] James M. Brown, *Simulation Teaching: A Twenty-Second Semester Report*, 34 J.

"provide effective training in negotiations, legislative drafting, legal writing for lay audiences, client counseling, motions practice, ethical problems . . . ; and in discovery practice, in conducting a trial, in 'working up' witnesses; and for various types of appearances before administrative bodies and legislative committees, while laying a sound substantive foundation."[90]

Games like these are beneficial to the classroom experience because they provide incentives for achievement, increase student confidence, encourage cooperation, demonstrate the relevance of the material, and improve doctrinal and professional skills and values.[91] Supplementing standard lecture courses with in-class games and ARS would significantly upgrade the mostly passive environment that many students experience in classrooms today.

B.   Solution #2: Games in a Flipped Classroom

Law school classrooms today suffer from a lack of personalized learning and a lack of choice for students. Even in a classroom designed like Solution #1—with increased engagement and feedback with ARS and other games—students are forced to learn at a pace decided by their professor. Further, students can choose only from the courses offered by their school, taught by the professors employed by their school. But, if the bulk of basic learning were conducted outside the classroom with online lectures and interactive games, learning could be personalized for students, professors could focus on active learning inside the classroom, and schools could offer more courses to students.

The Proposal:	**Gaming Elements:**
- Flipped classroom	- Leaderboards
- No in-class lecturing	- Competition
- Focus on applied learning	- Collaboration
- Online course supplement	- Progress tracking
created by teams of collaborators	- Feedback
- Video lectures from professors around	- Replay
the country	- Extra challenges
- Online activities and assessment	- Rewards/Badges
- Personalized programs	- Game levels
	Benefits:
	- Personalized learning
	- More courses to offer
	- Higher quality education
	- Career readiness

LEGAL EDUC. 638, 638 (1984).

90 *Id.* at 639–40; *see also* Donald B. King, *Simulated Game Playing in Law School: An Experiment*, 26 J. LEGAL EDUC. 580, 580 (1974) (discussing game playing as an educational technique in a commercial law course).

91 *See* Rosato, *supra* note 84, at 570–72.

The first step in moving basic learning outside the classroom is "flipping" the classroom. In a flipped classroom, lectures are posted online as videos for students to watch outside of class.[92] A number of teachers across the education spectrum have been using flipped classrooms for years, including law school professors.[93] Moving lectures online and outside the classroom has many benefits over keeping lectures in classrooms. First, it gives students the opportunity to watch and listen to lectures at their own pace. If students fail to understand material the first time around, they can watch a lecture again without having to ask the professor to repeat the material in class and using other students' time. Second, it enables professors to use class time more efficiently with interactive discussion, simulations, and other games in the classroom. The professor can focus on engagement, motivation, and applied learning.

A more advanced flipped classroom goes a step further by adding online, interactive games and assessments for students to play outside the classroom. An excellent example of this idea in action is Khan Academy software.[94] After students watch videos on the website, an application tests them on the material to ensure understanding.[95] ARS questions like those suggested in Solution #1 can be used in this way.

While interactive programs cannot engage in complex Socratic dialogues with students, they can provide less complex quizzing for students. In effect, the program does much of the work that a professor might normally perform in a classroom. This is the promise of technology: "to liberate teachers from those largely mechanical chores so that they have more time for human interactions."[96]

An interactive program like the Khan Academy goes a step further than just asking questions and providing answers. By tracking student progress, the program can identify areas of difficulty for students.[97] The program can then take the students

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[92] *See* KHAN, *supra* note 66.

[93] For example, Professor William R. Slomanson flipped his Civil Procedure course. *See* William R. Slomanson, *Blended Learning: A Flipped Classroom Experiment,* 64 J. LEGAL EDUC. 93, 95 (2014); LegalEDweb, *"Why Flip? & Macro Design" William Slomanson, Thomas Jefferson School of Law*, YOUTUBE (Nov. 6, 2014), https://youtu.be/Yo4eT17ZPmg?list=PLLxxzZq76ixxbd_KFvJYVxyezP8rxvQpY. Professor Deborah Threedy flipped her Contracts course. LegalEDweb, *"Flipping Contracts: The Making of the Videos" Debora L. Threedy, S.J. Quinney College of Law,* YOUTUBE (Nov. 6, 2014), https://youtu.be/b68yaH_k72w?list=PLLxxzZq76ixxbd_KFvJYVxyezP8rxvQpY.

[94] *See* KHAN ACADEMY, https://www.khanacademy.org [http://perma.cc/3BJW-NR59]; *see also* COURSERA, coursera.com [http://perma.cc/EDF5-PWEJ].

[95] *See Salman Khan TED Talk*, *supra* note 33.

[96] *See* SALMAN KHAN, *supra* note 66, at 123.

[97] *See Salman Khan TED Talk*, *supra* note 33.

through another review of the material the student struggled with, and even inform the instructor where the class—or a particular student—encounters trouble.[98]

Additionally, the Khan Academy software awards badges, points, and other rewards for achievements.[99] Virtual badges and points cost almost nothing to produce, but go a long way towards motivating students and encouraging learning efforts.[100] Virtual rewards can be given for simply watching video lectures and completing short assignments. Badges can be awarded publicly online to encourage competition between students. Further, rewards can easily be structured to encourage students to complete extra challenges. These challenges could be games played between students or extra missions above and beyond the assigned materials.

If the program is complex enough, it could track each individual's knowledge base across her student career to avoid unnecessary review of material already learned and to provide extra explanation for novel material. For example, if a student takes Criminal Procedure before Constitutional Law, then the Criminal Procedure program could spend extra time explaining selective incorporation of the Bill of Rights through the Fourteenth Amendment. This saves time, ensures understanding, and keeps students focused on the relevant material.

Further, by providing continuous, complex assessments, an interactive program would eliminate "Swiss cheese" learning. Khan Academy does this by requiring each student to correctly answer ten multiple-choice questions on every topic before moving on to the next topic. An interactive program used in law school should do the same, testing students on every part of the material covered in the course as opposed to the few select topics that are typically covered on a law school examination.

An interactive program would also eliminate the time professors spend checking to see that students have read or reviewed the required materials. Professors could require students to reach certain checkpoints in the program before they attend class. The program would easily identify and report to professors any student who has not completed the material. This would increase accountability and prevent students from coming to class unprepared.

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98 *Id.*
99 *Id.*
100 *See infra* Section I.B.

Professors might work alone in posting lectures and quizzes online, but if professors shared materials online, redundancy would be avoided. In the current model, hundreds of professors across the nation prepare for and deliver similar lectures every day. At some schools, the lecture is given more than once where there are multiple sections of the same course. And the process is repeated over and over every year. This is wasteful because, in theory, a lecture needs to be given only once so that it can be recorded and shared on the Internet forever—at least until an update is needed.

Even more, professors could collaborate with software companies, video game developers, and other professors to develop a high-quality product. The result could be bundled up and sold alongside textbooks as a virtual course supplement. This would subject the product to market forces, increase the quality of legal education, and enable students to hear lectures from the best professors in the field.

If much of the work traditionally performed by a professor were moved to online content, in-class professors would not need as much time to teach the same material. A professor could spend more time focusing on activities that can only be performed live, in the classroom. Or, schools could simply retain some of the extra time and have classes meet less often.

Additionally, schools could offer a wider variety of courses to reach the niche interests of students. Because professors would be relieved of many traditional duties, schools should feel more comfortable with adjunct faculty stepping into the classroom and teaching specialized courses. The professor would only have to conduct active-learning exercises in the classroom and to create and grade examinations. Exercises and exams could even be provided to the professor in a teaching kit accompanying the virtual course. Further, because less work would be involved for the professor, correspondingly lower pay could make small class sizes financially palatable for specialized courses.

Finally, because fewer resources would be spent on preparing for lecture-based courses, schools would be free to spend more resources on preparing students for the practice of law. This could be achieved through in-class activities in existing courses, or by providing additional clinical courses.

By flipping the classroom and using virtual course supplements, law schools could increase course offerings and enable personalized learning.

C.   Solution #3: Starting from Scratch

Law schools today put enormous cost pressures on students, and at the end of a three-year study, students receive a diploma and a transcript that says little about their ability to practice law in an increasingly diverse profession. If legal educators moved every aspect of legal education online that could reasonably be moved online, the cost of those components would instantly reduce to near zero—drastically lowering the expense of law school to students. Furthermore, if the credentialing roles of law schools were decoupled from the teaching roles of law schools, each individual could be credentialed separately on a range of skills instead of being lumped together in a one-size-fits-all J.D.

The Proposal:	Gaming Elements:
- Standalone virtual courses	- Leaderboards
- Students dictate their own pace	- Competition
- No direct professor oversight	- Collaboration
- Peer-to-peer tutoring	- Progress tracking
- Course connects students, professors, and professionals for social learning	- Feedback
	- Replay
- Decoupled credentials	- Extra challenges
- Customized credentials	- Rewards/Badges
- Microcredentials	- Game levels
- Game-based assessment	- Playing levels
- Peer-based assessment	**Benefits:**
- Comprehensive, diverse assessment	- Lower cost
	- Customized education
	- Accurate credentials

The first aim of Solution #3 is to lower the cost of legal education by moving much of the experience online. An online program cannot perform many aspects of legal education. Computers cannot engage students in Socratic dialogue, grade written briefs or examinations, or conduct clinical courses.[101] But, Solution #2 attempts to demonstrate that much of the work of a lecturing law school professor can be performed by a virtual course supplement. Solution #3 takes this idea as far as it will go by moving lecture-based courses entirely online. The cost of an online course to students would be significantly less than a live, in-person course.

The initial cost of developing online courses could be expensive. Basic online courses cost about $15,000 to produce.[102] Complex online courses would cost much more. If the course is

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101   Not yet, at least. *See generally* RAY KURZWEIL, THE SINGULARITY IS NEAR: WHEN HUMANS TRANSCEND BIOLOGY (2005).

102   *See* JEREMY RIFKIN, THE ZERO MARGINAL COST SOCIETY: THE INTERNET OF THINGS, THE COLLABORATIVE COMMONS, AND THE ECLIPSE OF CAPITALISM 117 (2014).

deeply interactive and designed by a team of professors, software engineers, and game designers, the cost could easily rise into the hundreds of thousands of dollars. But once the course is developed, an online course can be shared online as an information technology good.

Information technology goods are important because they have near-zero marginal cost reproduction.[103] With near zero-marginal costs of reproduction, information technology goods can be instantly copied and shared with anyone connected to the internet at almost no cost. A number of industries have been revolutionized by near-zero marginal costs—for example, the music industry—and many more will follow, including legal education.[104]

So, although the upfront cost of a single online course could be significant, and many competing online courses would likely be developed, the costs can be spread across all of the students taking that course across the nation in any given year. For example, assuming a complex online Contracts course costs $500,000 to produce, and assuming five different groups develop competing Contracts courses, then the total cost of the courses would be $2.5 million. But these costs could be spread amongst the 40,000 or so law students who take Contracts every year.[105] At this rate, an entire online course would cost approximately $62.50 per student.[106] Further, the online courses could be used year after year, lowering the cost even more.[107]

Specialized courses—e.g., Estate and Gift Taxation—would cost more for students as virtual courses because the cost would be distributed among fewer students than a foundational course like Contracts. But, costs can be minimized if the courses are less complex or updated less often.

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[103] The marginal cost of reproduction of a good is the cost of producing one additional unit of that good. *Id.* at 3–4. When something is written onto a computer as source code—i.e., when it becomes an information technology good—then it can be duplicated by simply copying and pasting that source code. The cost of copying and pasting source code is the cost of running a computer for a few seconds or minutes. And because the cost of running a computer for a few seconds or minutes is near zero, the cost of reproducing an information technology good is near-zero.

[104] *See generally* RIFKIN, *supra* note 102.

[105] *See* Elizabeth Olson & David Segal, *A Steep Slide in Law School Enrollment Accelerates*, N.Y. TIMES (Dec. 17, 2014, 7:04 AM), http://dealbook.nytimes.com/2014/12/17/law-school-enrollment-falls-to-lowest-level-since-1987/?r=0 [http://perma.cc/EEC2-5MRL] (noting that 37,924 students started law school in 2014).

[106] Of course, this assumes that the costs would be evenly distributed amongst the competing courses, and that the products would be sold without profit. But even assuming that taking these factors into account would double the price of the product, the price would still only be around the price of a law school textbook.

[107] This assumes that the overhead costs of running the course and the costs of updating and upgrading the course would not significantly add to the cost.

Offering virtual courses to a massive number of students online might seem implausible, but the idea is hardly novel. A number of higher education courses are already offered over the internet, and the trend even has its own name: Massively Open Online Courses ("MOOCs").[108] Sebastian Thrun, a professor from Stanford, and Peter Norvig, a Google employee, together offered their first MOOC on Artificial Intelligence in 2011.[109] A total of 160,000 students from 190 countries signed up for the course, astonishing Professor Thurn. "Having done this, I can't teach at Stanford again," Thrun said.[110] "I feel like there's a red pill and a blue pill, and you can take the blue pill and go back to your classroom and lecture your 20 students. But I've taken the red pill, and I've seen Wonderland."[111] Thrun went on to start his own online university, Udacity, to provide a quality education for every young person in the world.[112] Law school professors, too, should be inspired by the possibility of teaching thousands of students at a time through virtual courses.

In addition to lower cost, Solution #3 enhances personalization by ditching the format of traditional courses—the bi-weekly, hour-long sessions with a single professor over a four-month semester. Instead, students would take virtual courses at their own pace without direct oversight by a professor.

Law school today is structured around learning within a particular period of time. By decoupling the traditional law school course schedule from the learning experience, students can learn at their own pace. In this way, students advance if and when they reach a specified level of mastery, rather than a specified period of time. So, if a student fails to understand a certain subject matter, he or she is not forced—or even permitted—to move on to the next topic. Instead, the student can keep working on a topic either by watching the lecture again, or by replaying the interactive games. If the student continues to have trouble with the material, the program can connect him or her with a student tutor who mastered the material. The student tutor would be rewarded with points or badges for assisting, and gain a deeper understanding of the material.[113]

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108   Tamar Lewin, *Instruction for Masses Knocks Down Campus Walls*, N.Y. TIMES (Mar. 4, 2012), http://www.nytimes.com/2012/03/05/education/moocs-large-courses-open-to-all-topple-campus-walls.html?_r=0 [http://perma.cc/XS65-YJDU].
109   *Id.*
110   *Id.*
111   *Id.*
112   RIFKIN, *supra* note 102, at 114–15.
113   *See* Binford, *supra* note 39, at 11 (noting that "teaching generally produces the highest rate of long-term retention").

Further, courses could be offered at varying levels of difficulty—i.e., different playing levels. A course completed on easy, medium, or hard would demonstrate "proficiency," "mastery," or "excellence," respectively. Students could customize their learning profiles by reaching for "mastery" and "excellence" with courses relevant to their career paths, while general education and exploratory courses could be taken at a "proficiency" level.

Online courses also make it feasible to break up courses into smaller, distinct parts that do not fit traditional course structures. Most law schools, for instance, offer "Legal Research and Writing" that covers a wide variety of material. This course could be broken up into "Legal Research" and "Legal Writing." "Legal Writing" could be further divided into "Persuasive Legal Writing" and "Objective Legal Writing." And "Legal Citation" could be separated from "Legal Research." Another course could focus on issue spotting, another on fact gathering, and another on the analysis of appellate court opinions via the case method. Law schools already teach these concepts, but bundled together in an unorganized concoction. By separating the elements of legal education into distinct courses, each concept can be individually developed and assessed.

Individuals outside the academic sphere could also develop virtual courses. Law firms, for example, could develop courses on case management or litigation basics. The courses could be offered to all students, and firms could require students to take such courses as a condition of employment. In this way, firms could reduce the costs of employee training, share knowledge with others in the legal profession, and bolster the public image of their firm.

Because virtual courses remove the complex, live interaction often found in a law school classroom—e.g., Socratic dialogue and other social engagement—other aspects of law school would have to compensate. One way to keep social interaction in legal education is to keep some courses as live courses, such as clinical courses. A greater focus on clinical courses would also add to the educational experience. But, clinical courses do not generally focus on learning through Socratic dialogue. Therefore, in addition to increasing clinical courses, law schools could create a course with small class sizes dedicated solely to Socratic dialogue to kick-start the law school experience. The course should not focus on the material being learned, but rather on the method of learning. In this way, students could continue to reap the benefits of Socratic dialogue and the case method—i.e., learning

to think like a lawyer—without worrying about keeping pace with the material.

Another way to maintain social interaction with legal education is to couple virtual courses with live activities. Because students would take courses at their own pace, live exercises would have no defined schedule. As students reach certain checkpoints in their online courses, the program could add them to a queue to participate in live exercises. Live exercises would vary in size and type—they might be small exercises with other students, one-on-one sessions with professors, or large simulations with many participants. Live exercises might be omitted when courses are taken at the "proficiency" level, and increased in frequency when taken at the "excellence" level. But course creators should try to minimize or eliminate the need for professor involvement in live exercises to keep costs down. For example, in one exercise students would receive a hypothetical voicemail from a potential client.[114] Students would be assigned to create questions to ask the client in a future interview. After constructing questions on their own, students would meet in small groups to share and discuss their ideas. After the discussion, they could collaborate on a set of questions to present to a professor for grading. Or, the virtual course could utilize peer-to-peer grading for even greater efficiency.

Peer-to-peer grading is often used in MOOCs to grade assignments that require human eyes to evaluate, such as short-answer problems. In peer-to-peer grading, after students submit their own answers for an assignment, they are tasked with grading the submissions of about five other students who are also taking the course.[115] To reduce bias, grading is anonymous and the distribution of submissions for grading is random.[116] The final grade given to students is the median of the peer-assessed grades.[117] A number of studies have demonstrated the accuracy of peer-to-peer grading.[118]

At the end of a course, a final examination should be administered to ensure students have met course goals relative to the mastery levels of the course. While assessments during the

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[114] This example is borrowed from Professor Victoria Duke. *See* LegalEDweb, *"Bringing Exercises in Large Classes" Victoria Duke, Indiana Tech Law School,* YOUTUBE (Oct. 9, 2014), https://youtu.be/5jz7pSWbylw?list=PLdfvq_luev5uf2aUUkJOcJb0YFIIBMrhy.

[115] Chris Piech et al., *Tuned Models of Peer Assessment in MOOCs*, STAN. UNIV., http://web.stanford.edu/~cpiech/bio/papers/tuningPeerGrading.pdf [http://perma.cc/SW9P-5DNL].

[116] *Id.*

[117] *Id.*

[118] *See* RIFKIN, *supra* note 102, at 115–16; Piech, *supra* note 115.

course would be taken without oversight, strict oversight should be utilized in the final examination to deter cheating throughout the course. Law schools could have a dedicated room and staff member to administer examinations on demand, since students would move at their own pace. To prevent students from sharing questions and answers with future test-takers, one of two solutions might be adopted: either a new national examination could be created once a month and administered contemporaneously,[119] or a few dozen examinations would be available and administered randomly.[120]

The grade on the examination, however, should not show up on a transcript as the definitive sign of how much a student knows. Rather, it should test whether the student can meet the requirements for a particular level of mastery. The assessment would, in effect, certify that the student completed the online course at a particular level of mastery. Students should be able to retake the final examination as many times as they want at any level of mastery. This way, students would continue to learn the material if they have not met course goals, rather than simply assigning a letter grade and forcing them to move on to another topic. Moreover, students could return to earlier courses and complete them at higher levels of mastery.

Course assessments should be standardized across the country—or across each state—and graded by a central authority, just like the Law School Admissions Council does for the LSAT. This would eliminate the uncertainty that comes with current transcripts, and decrease the importance of which law school a student attends.

A variety of credentials could then be created to match the diversity of the profession. Credentials would vary by level of mastery, number, and type of course requirements. Some credentials might require dozens of courses, while others might only require ten. Some might require Mock Trial or Federal Income Tax, and others not at all. Some might require excellence across the board, and others mere proficiency. The result would be credentials that would accurately indicate the breadth of an individual's knowledge for potential employers. Further, it would enable students to intricately customize their law school experience.

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119 In this way, the examination would not be perfectly "on demand," but it would nonetheless be available for a student to take within one month of finishing the course.

120 Of course, if the same few dozen examinations are administered over and over, students would still be able to share questions and answers—especially over the internet. But, any student who studies the answers to a few dozen examinations is likely to have met course objectives regardless.

Finally, courses should be offered, and encouraged, for law school graduates. Graduates looking to change jobs and enter new legal fields could have access to courses to acquire particular credentials. And online courses could substitute for MCLE credits, making it easier for lawyers to stay updated with relevant legal knowledge.

With these changes, law schools could drastically reduce the cost of legal education and focus on social learning that online courses cannot provide. Students would graduate with significantly less student debt, ready to enter the legal profession with a customizable set of credentials that accurately reflects the particulars of each individual's abilities.

CONCLUSION

The Langdellian model is long broken and in dire need of repair. From the lack of engagement, to minimal feedback, to limited course offerings, to nebulous credentials, to the mountains of debt piled on students, the legal education system fails the very people it intends to serve. Gamification is fit to solve each of these problems.

Games motivate us to engage with our work; they provide meaning to our experiences; and they challenge us to overcome obstacles. Games even motivate some of us to virtually farm *for free*. Gamification takes queues from these lessons by using game thinking and game mechanics to engage audiences and solve problems.

Law school is already a loose collection of games. Aside from lecturing, nearly all pedagogy is gaming. Legal educators, therefore, are already in the business of game development. Why not look to game developers for help?