Cyber Business Law and Project-Based Learning

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Abstract

This article describes a project-based learning pedagogical approach to learning legal concepts that transform these concepts into managerial propositions for students, especially for computer information systems and business administration majors. This pedagogy provides opportunities and experiences for students to become sensitive enough to real-world topics that they can posit a question to a legal professional regarding cyber business laws. The hands-on project-based learning method is an engaging and interactive way to learn the information in a group environment, and then it requires the student to demonstrate knowledge at the individual level. The data collected for this study suggests that the project-based learning style is effective for learning legal concepts.

Keywords: Business Law Education, Project-Based Learning, Cyber Business Law

Introduction

"Project-Based Learning (PBL) is the real-world execution of academic concepts."
Emily Pilloton, Author of Design Revolution & TED Speaker

The cyber business law course is an upper-level business class offered at Northwestern State University of Louisiana, a public regional four-year institution, as a required business class for computer information systems majors, and as an advanced business elective for business administration and accounting majors. The class focuses on legal consequences involving the creation, protection, monetization, and non-monetization of intellectual property by providing the educational opportunity for business students to become educated partners with their current, or future, legal team. This includes the conferring of intellectual property rights, online jurisdictional issues, privacy concerns, first amendment in an online world, domain name rights, and legal aspects concerning e-commerce such as taxation.

The course's goal is to provide the educational opportunity for students to become educated partners with their current, or future, legal team by covering legal aspects of creating intellectual property, owning and operating a business online, and maintaining, securing and protecting confidential data on computer networks and web pages. The primary objectives of this class are:

1. Identify some of the legal aspects of owning and operating a business online including, but not limited to contracts, e-commerce, domain name rights, clickwraps, browsewraps, privacy, and taxes.
2. Determine some issues revolving around maintaining, securing and protecting private data.
3. Review intellectual property rights and online jurisdictional issues.
4. Examine national and international implications of digital business. (Northwestern State University Registrar's Office, 2016-2017)

The instructor covers the topics with an understanding that not all students will go to law school, but that they must have some awareness of legal issues that they may confront in the cyber business arena. The students accomplish the objectives through reading topics from the required textbook entitled, *The IT/Digital Legal Companion: A Comprehensive Business Guide to Software, IT, Internet, Media and IP Law*, by Gene Landy (2008), participating in discussions, and through an innovated approach called project-based learning (PBL).

Many employers, clients, and professionals request that students provide documentation about their acquisition of skills such as inter- and intra-personal communication, creativity, leadership, and conflict resolution. Implementation of PBL attains the course objectives by allowing students to begin applying class material immediately, which improves information retention and provides documentation for future clients, employers, professional/graduate school, or a real-world intellectual property venture. It allows students to tackle problems that they might face in the global marketplace while breaking from the monotony of typical business law lecture-style classes, and permits the students to collaborate, express creativity, lead, and resolve conflicts. Ultimately, this endeavor can generate a body of work usable in a business portfolio for a future client, employer, or graduate school.

This research study describes the implementation and results of a project-based learning approach for the cyber business law class in the spring of 2015 semester. The hypothesis is that students will perform similarly on individual and group project components within the course and across course delivery types, in this case, face-to-face (F2F) and online classes.

Literature Review

John Dewey is often credited with the "learn by doing" educational strategy (National Education Association [NEA], 2002-2015), which is the foundation of the PBL approach. In this pedagogy, "students gain knowledge and skills by working for an extended period to investigate and respond to an authentic, engaging and complex question, problem, or challenge" (Buck Institute for Education [BIE], 2016a, par. 1). According to the National Education Association [NEA] (2002-2015), this educational opportunity simulates real-world scenarios, and thus, provides the students with a chance to become partners in their education. Using this technique allows the students to develop a foundation to build upon using a series of smaller assignments (BIE, 2016a; 2016b; Pullan, 2011).

PBL strives to provide a legitimate problem or challenge so that students can apply classroom knowledge and skills as a solution (Vega, 2012), and researchers have identified that this pedagogy involves realistic problems, student control, coaching and facilitating, and group work (Darling-Hammond & Barron, 2008; Vega, 2012; Thomas, 2000). The approach for the cyber business law class aligns with the PBL approach by providing students with high-stakes consequences associated with the realistic scenario of legal ownership of a business's intellectual property. This PBL approach to the class is a type of active learning used to convey legal concepts to undergraduate students.

The PBL active learning approach in the cyber business law class is similar to the one used by the researchers in *Applying Legal Concepts to Business in a Legal and Ethical Environment of Business Course: The Build-a-Business Project*. Greecki and Willey (2017) describe building their Legal and Ethical Environment of Business (LEEB) course around a project that encourages critical thinking and writing and provides the students the opportunity to establish a personal connection to their assignment of building a business. Their project allows the students to apply legal concepts to real-world scenarios in a manner which is interesting to them and helps the instructors achieve the goal of "bring(ing) the material to life for" the students" (p. 89). Another strong proponent of active learning is Renae Livingston (2015), who provides several activities for conveying business knowledge to her students. These projects and games encourage students to apply the information while demonstrating improved critical analysis of the material.

Mitchell, Petter, and Harris (2017) also advocate for engaging students through active learning techniques and exercises. Their review of existing literature identified twenty information system class related active learning assignments. Most of the assignments involved students working in teams and demonstrating written or oral solutions. For example, one assignment fostered student engagement by having students collect information and develop discussion questions for subject-matter experts that visited campus (p. 27). Even though the assignments were information systems related, many of the ideas could apply across different subject areas. This provides students with more ownership of the content presented in class through activities that include a selection of guest speakers, business proposals, industry projects, interactive cases, and virtual projects. This allows for the information to become more credible to their studies. (Mitchell, Petter, & Harris 2017)

To the best of our knowledge, there are no studies on the application of PBL to cyber business law. The instructor's approach in the course for this study aligns with the PBL and active learning approaches by providing students with challenges and consequences associated with the realistic scenario of legal ownership of intellectual property of an online business.

Methodology

Implementation of the Project-Based Learning Project

According to Eger (2016), project-based, place-based, experiential, authentic, constructivism begins with a problem. For the cyber business law class, the students work on a group project to create their own

business and application (app). This includes composing a written intellectual property business plan and a group presentation. The group project hinges upon the students completing a series of several small projects that they incorporate into the larger project's intellectual property business plan.

The instructor randomly groups the students at the beginning of the semester, who must then work with their group for the entire semester, whether it is for the group project topic or to discuss current real-world cyber business law issues. Each newly formed group creates a fictitious cyber business company and an app according to the instructions shown in Figure 1.

Figure 1. An example of Mini-Group Project #1 instructions.

Mini-Group #1
Create a fictitious app---name it, what is its function, and create a trademark---Once you do, then protect it. Look at the following issues for now: copyright, trademarks, and patents. Your group must do research to see if you have infringed upon existing companies' copyrights, trademarks, and patents. Your team must report back these initial findings in a two to three page report.

The instructor provides the F2F class 15 to 20 minutes during the first class day to complete the task, and the online class completes the same task during the first week. The instructor then informs the F2F class that each group has a legal budget and that they are required to adhere to the budget. Some examples of the different groups' budgets might include:

1. Group 1: A small business that has a legal budget of $175,000.00 per fiscal year, but has the legal prowess of a sibling who is charging $50.00 an hour and a cousin that is acting as a legal liaison for $35,000.00 per year.
2. Group 2: A mid-sized business that has a legal budget of $250,000.00 per fiscal year and in a slightly larger region where the attorneys' costs $125.00 an hour. Liaison costs $50,000.00 per year.
3. Group 3: A large business has a legal budget of $500,000 per fiscal year, an even larger region, and the attorneys charge $300.00 an hour. Liaison costs $75,000.00 per year.
4. Group 4: The largest business has access to more capital, which allows the litigation budget to be 1.5 million dollars per year. The attorneys charge $500.00 an hour, and a minimum of three attorneys must work on every question as the company wants to ensure that the best minds are working on the given problem. The liaison costs $125,000.00.

To maintain accurate costs, the F2F group receives an additional mandate to record and deduct the time and money necessary to resolve all the legal questions which include trademarks, copyrights, and patents. The idea here is to convey to the students that legal queries costs and they should hone their questions before meeting with their attorney because they charge by the hour. While the students will not know everything, at least they will strive to become an educated partner with their legal team.

The online students receive the same individual and group projects; however, they do not receive the additional litigation budget component because of the complications associated with working in a virtual group. Specifically, the F2F class meets regularly, ensuring regular group meetings that lead to regular maintenance of the litigation budget while also having direct access to the professor during that time. The irregularity of meetings among online students, due to work and personal schedules, do not necessarily offer the same opportunity. Therefore, it is not currently implemented in the online course, but may be introduced in future course updates.

Students present their written work for the mini-group assignment #1 during the next class meeting, or the given deadline for the online class, including the name of their company, the app they have created, and the assigned budget and their deductions for the class. Next, the students investigate the following topics on a weekly basis: copyright, patent, trademark, onboarding, offboarding, non-compete clauses, non-disclosure clauses, and trade secrets.

To replicate the business financial environment, the instructor adjusts the F2F students' budgets during the course by suddenly announcing a scenario that cuts their budget. Some examples include:

1. A randomly picked percentage because Research and Development have requested capital to continue moving forward with the latest round of beta testing.
2. Funds are reallocated for an urgent marketing campaign.
3. The legal liaison has requested a substantial pay raise.

The students must revise their budgets and begin mini-group projects #2 and #3. Mini-group project #2 (Figure 2) has the students draft a non-compete agreement (NCA) and non-disclosure agreement (NDA) to the present to their employees for either part or the whole life cycle of an employee (hiring, monitoring, and off-boarding). The instructor may also have the student combine both the NCA and NDA drafts for presentation to the employee.

Figure 2. An example of Mini-Group Project #2 instructions.

Mini-Group #2 - Employees All Aboard!

Students:

Now that you have created your intellectual property (IP), your company has decided that it must bring on 10 people to help. As such, your group must draft sound on-boarding, monitoring, and off-boarding policies for the employees that you will hire.

These agreements, presented to individuals in the on-boarding process, enforced during employment, and used in terminating the employee contract, must reflect the laws from the textbook and the jurisdiction where they have selected to locate their business. The students must present them and face questioning by the professor in the F2F class. The online students present their contracts to be graded for acceptability.

As part of mini-group project #3 (Figure 3), the students work on policies that reflect the laws for onboarding and off-boarding policies for their fictitious employees and beta testing for their fictitious application.

Figure 3. An example of Mini-Group Project #3 instructions (Burnett, 2017).

ALERT! ALERT! ALERT! -- MINI-GROUP PROJECT #3

Students:

Your group has been hit with a letter that indicated that you did not do as directed by your client. You were supposed to do an Internet of Things (IoT) App. (SEE INSTRUCTIONS FOR MINI-GROUP 1.) If your group has not done so, your clients from pretend *Shark Tank* will pull out ALL of their promised investments for your fictitious app. Thus, for Mini-Group 3-you must, that is if you did not have an IoT app, start again with an actual IoT app, and write a beta test agreement with a third party vendor. You are to run the same test of MG #1--make sure that it does not exist in the real world. If you do not, the investors will not be pleased as they do not wish to be exposed to possible litigation. All groups must turn in a beta-test agreement with a statement that you have checked the required information of MG1, basically that your group has not copied any real world company's copyright, patent, and trademark. Please be sure to do this as I will check.

If your group did do their initial app for the IoT, then you may proceed with simply writing up a beta test agreement with a third party vendor and turn in the assignment.

After the students prepare the documents and again present in class, or submit online, the students receive additional information that constitutes the major group project. This information is a new scenario that forces students back to the beginning of the project. Some scenarios include:

1. An intern has taken their company's information and sold the information to a competitor that has diligently worked to put them out of business.
2. Long-standing rivals have reversed engineered their app and has now effectively patented their former trade secret.
3. A group member failed to do a proper patent search and has unknowingly infringed upon an existing patent.

Figure 4 shows a recent example scenario in which hackers hold the intellectual property for ransom. Regardless of the scenario, the result is that the students no longer control their hard-earned intellectual property portfolio, and must begin again from scratch or risk costly and timely litigation.

Figure 4. An example of the Major Group Project instructions (Burnett, 2017).

Major Group Project Announcement - Instructions!

Students:

Your group has learned that you are to appear on the fake *Shark Tank*. However, your entire database has been hacked by an unknown group. They are demanding bitcoins, $100 million bitcoins to be exact to unlock the database.

Unfortunately, you do not have the bitcoins. You vaguely recall having a backup plan, but it is in cloud storage--but you have forgotten the password and the company that provided the cloud.

That leaves you with one of two options to present to the host of the show. You can return to your previous non-IOT app to present the following: A SAAS model (turn the app into a SAAS and how to obtain digital content--OR--cry.

You being you...are determined, and will get to work on the former, and not the latter, option. Your group will present all of the information-copyright, trade secret, patents, beta testing, SAAS information, and how to obtain digital content to the made up sharks! You will present a professional and polished report. It will be free of any errors and have a dynamic cover page. Please see the syllabus for due date and any other information pertaining to the major group project.

Best of fortune!

Students bemoan either the intellectual property espionage or failure to research and protect properly, and are wary of a certain impending bankruptcy. However, the instructor informs the students that they, with the knowledge they have gained over the weeks, must return to the drawing board, and encourages them to be more determined while carefully designing and implementing measures to protect their intellectual assets. Students also cover the investigated topics in a paper, and produce a visual aid to present to the class and for the instructor to review.

The students diligently work to protect their intellectual property and fend off external and internal competitors by applying the learned concepts. In another twist, the instructor dissolves the groups due to another possible real-world business scenario, such as the business partners disagreeing on the company's direction, which suddenly leaves each student on his or her own. Each student must then work to show that they have mastered the concepts up to that point in class, and have the research skills to move forward on additional concepts introduced outside of the initial group. The instructor, at this point, is trying to ensure that the students understand the legal concepts presented that are actionable for business professionals. The students are repeatedly informed that they must frame policy decisions within the rule of law and their respective business location jurisdictions, and that they should also check with their legal partners to ensure it. This constitutes their project.

The individual project may consist of repeating all mini-group projects on their own by forming another company, or the students may be told to complete different parts of the mini-group projects with additional material added. Figure 5 shows a recent example.

Figure 5. An example of the Individual Project instructions.

INDIVIDUAL PROJECT
Individual Project.... Your group was sued. You are mad at each other, and have abruptly decided to go separate ways. You have decided to start a Software as a Service (SAAS) on your own. You need a name and logo for your company, check to make sure these are not taken already. You provide a good and a service, not necessarily tangible. Find a real cloud service and report, study their clickwraps/browsewraps and explain if you accept and why. You must create your terms of service for your SAAS, specialize in one additional country, know US and the other country's privacy laws and you are to write your terms for this country and US. Find a real insurance company to insure your company. You are also to find which ISP company you will use. You are to address a legal topic from Chapters 13-19. You are to provide this in 5 to 7 pages. Be sure to cite, and have a dynamic cover. You are to provide a three minute video with you explaining to investors this material. Make sure you have a visual inside of the video. It cannot be a PowerPoint (Sway, E-maze or Prezi). Please see syllabus. Stay encouraged!!!

The class is a series of repetitive tasks that attempt to ensure that the students learn and retain the concepts with the instructor's guidance to strengthen their project in both F2F and online courses. The overall goal is for students to demonstrate a working knowledge of the material to know how to ask a question of their legal team rather than trying to navigate cyber business law without an attorney.

These mini-group projects vary each semester to ensure that the next group of students have new projects and cannot rely on previous students' work, while also allowing the groups full creativity with the only caveat being that the business cannot be illegal. Therefore, the professor is providing a real-world business scenario with problems and challenges that enable students to apply classroom knowledge and skills in a group-based approach with guidance.

Method

For this research, the data points were the students' project scores, group project scores, and the course delivery method. The study hypotheses are as follows:

H_1: Individual project scores will not be significantly different between F2F and online classes.

H_2: Group project scores will not be significantly different between F2F and online classes.

H_3: Individual project scores will not be significantly different from group project scores within a class.

The researchers gathered individual and group project scores from the instructor's grade book for the F2F and online course sections in the spring of 2015. A two-sample *t*-test was conducted to determine if the method of delivery (F2F vs. Online) would make any difference in the scores of the students for both,

individual and group submissions (H_1 and H_2). A paired *t*-test was used to determine if there was a difference in students' scores while participating in a group project setting versus participating in an individual project setting (H_3). Therefore, the dependent variable was each student's score in the group project and tested against the score in the individual submission for both online and F2F groups. Paired sample *t*-test compared two means that are the same individual, object, or related units (Levine, 2014). It was theorized that when the class was completed, the students would be exposed to educational opportunities that have enhanced and increased their communication, problem-solving, critical thinking, and team skills.

Results

Students in the course received two scores for the project, an individual score (150-point scale) and a group score (100-point scale). This allows the student to demonstrate mastery in both a group and individually without over-relying on the strongest group member(s). The individual project begins after the group is dissolved and the student must apply the knowledge on their own; therefore, if the student's score is significantly lower from the student's group score, then the student may not have mastered the material. For example, a student earning a group score of 78% should also earn around 78% or higher on the individual score. Furthermore, if the two scores are not significantly different for the entire class, then the project-based learning pedagogy created an environment that allowed students to learn equally well as a group and individually.

Researchers analyzed 50 students' scores for two different course delivery methods, F2F and online, taught by the same instructor in spring 2015, to determine if there was a significant difference between normalized individual and group project scores. Group projects followed similar scenarios as described previously, and the individual project consisted of students repeating all the mini-group projects on their own. Two students were removed from the online class sample due to a lack of participation in the course, leaving 24 students in each class. Table 1 shows paired *t*-test results for individual vs. group project scores for the F2F class, and Table 2 shows the results for the online class. In the F2F class, there was not a significant difference in the individual normalized scores (M=92.08, SD=8.73) and group scores (M=90.58, SD=4.97) conditions; $t(23)=-0.69$, $p=0.498$. In the online class, there was not a significant difference in the individual normalized scores (M=85.92, SD=15.22) and group scores (M=84.25, SD=8.10) conditions; $t(23)=-0.44$, $p=0.664$. Therefore, we fail to reject hypothesis H_3. This implies that the project-based learning pedagogy allows students to achieve commensurate grades on an individual and group basis.

Table 1

Paired t-Test: F2F Individual (Normalized) vs. Group Project Score

	F2F Individual and Group Project Scores						95 % CI for Mean		
	Group			Individual					
	M	SD	n	M	SD	N	Difference	T	df
Score	90.58	4.97	24	92.08	8.73	24	-6.00, 3.01	-0.69	23

*p < 0.05

Table 2

Paired t-Test: Online Individual (Normalized) vs. Group Project Score

	Individual and Group Project Scores						95 % CI for		
	Group			Individual			Mean		
	M	SD	n	M	SD	N	Difference	t	df
Score	84.25	8.10	24	85.92	15.22	24	-9.50, 6.17	-0.44	23

*p < .05

Table 3

Two-Sample t-Test: F2F vs. Online Individual Project Score

	Individual Project Scores						95 % CI for		
	F2F			Online			Mean		
	M	SD	n	M	SD	N	Difference	t	df
Score	138.1	13.1	24	128.9	22.8	24	-1.64, 20.14	1.72	36

*p < 0.05

Table 4

Two-Sample t-Test: F2F vs. Online Group Project Score

	Group Project Scores						95 % CI for		
	F2F			Online			Mean		
	M	SD	n	M	SD	N	Difference	t	df
Score	90.58	4.97	24	84.25	8.10	24	2.41, 10.26	3.26*	38

*p < 0.05

Caution should be exercised when comparing this project-based learning pedagogy across course delivery modes or between two classes because, even though it produces consistent scores within a class, each class may have unique characteristics, strengths, and weaknesses that contribute to significant score differences when compared to another class. Comparing students across the two delivery modes (Table 3 and Table 4) shows mixed results. For individual project scores, there was not a significant difference in the F2F scores (M=138.1, SD=13.1) and online scores (M=128.9, SD=22.8) conditions; t(36)=1.72, p=0.094. Therefore, we fail to reject H_2. For the group project scores, there was a significant difference in the F2F scores (M=90.58, SD=4.97) and online scores (M=84.25, SD=8.10) conditions; t(38)=3.26, p=0.002. Therefore, we reject H_1. Despite these differences, students in both delivery modes earned above-average scores as a group and individually. The average group score for online delivery was 84.25% and 90.58% for F2F, while the average individual score for online delivery was 85.92% and 92.08% for F2F. This indicates successful learning outcomes for both delivery modes using the project-based learning pedagogy.

Conclusion

The data suggest that PBL pedagogical approach to the cyber business law course produces comparable outcomes between the group and individual projects for both online and F2F version of the class. This is likely because it captured the characteristics Drew Perkins (2016) described as aligned thinking and learning, rich inquiry, authenticity, autonomy, meaningful assessment, and craftsmanship. In the course project, the instructor directed students to continuously rethink their positions about intellectual property, to question the professor and their group members regarding the topics presented, to be creative, vocal and bold about their choices, to present their collaborative intellectual property policies, and to defend vigorously those choices for their fictitious companies. (Perkins, 2016)

To maintain a consistent learning environment, the cyber business law class project exposes all online and F2F students to the same PBL pedagogy with each class adhering to the same guidelines, except for the litigation budget, for each semester and course section. Two limitations in this study are (1) a lack of a control group for comparison with a typical lecture-based approach, and (2) the online class does not have to contend with the litigation budget. Research is needed to understand the specific factors contributing to the students' two scores such that a class section could be developed as a control group that encapsulates the same components but with a traditional pedagogical approach. The primary issue in implementing the litigation budget revision component for online sections will be determining a methodology that resembles the regular class meetings with access to the instructor.

The results, even with these constraints, imply that the students are actively participating in learning the material. This provides for excitement and engagement in the class. Ultimately, the researchers believe that the project-based learning approach is helping the students to become better equipped to face the cyber business law challenges they may face in the real world.

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